

CLAIMS

[1] A process for producing an unstretched film comprising heating and melting thermoplastic resins and ejecting and extruding them through an extrusion T-die onto a casting roll, wherein a thermoplastic resin to form an unstretched film and another thermoplastic resin than the thermoplastic resin are separately heated and melted, the other thermoplastic resin is led to both edges of an extrusion T-die, the two resins are ejected and extruded onto the casting roll in such a manner that the other thermoplastic resin melt can coexist on both sides of the heated and melted thermoplastic resin to thereby form an unstretched film where the other thermoplastic resin coexists on both sides of the thermoplastic resin, and thereafter the other thermoplastic resin part is cut off.

[2] The process for producing an unstretched film as claimed in claim 1, wherein the thermoplastic resin and the other thermoplastic resin are heated and melted separately in different extruders, and fed to the resin melt supply ducts connected to the respective extruders, the heated and melted thermoplastic resin and the other thermoplastic resin are fed to a feed block where holes are formed on both sides of the lower part of the duct to which the thermoplastic resin is fed and the end of the duct to which the other thermoplastic resin is fed is connected with each hole formed on both sides thereof, and thereafter these are widened through a manifold connected

to the feed block and extruded out through the die lip of the extrusion T-die onto a casting roll in such a condition that the other thermoplastic resin coexists on both sides of the thermoplastic resin.

[3] The process for producing an unstretched film as claimed in claim 1 or 2, wherein, in the feed block, the cross section of the lower part of the duct to which the thermoplastic resin is fed is rectangular, and the cross section of the holes to be formed on both sides of the lower part of the duct is rectangular.

[4] The process for producing an unstretched film as claimed in any of claims 1 to 3, wherein the thermoplastic resin and the other thermoplastic resin are ejected out through the extrusion T-die to form the unstretched film in such a manner that the other thermoplastic resin may form only a part inevitably thicker than the part of the thermoplastic resin.

[5] The process for producing an unstretched film as claimed in any of claims 1 to 4, wherein the difference in the melt viscosity between the thermoplastic resin and the other thermoplastic resin is at most 3000 poises at a shear rate of from 20 to 500 sec^{-1} .

[6] The process for producing an unstretched film as claimed in any of claims 1 to 5, wherein the other thermoplastic resin is a colored thermoplastic resin.

[7] A process for producing a resin-coated metal sheet

comprising heating and melting thermoplastic resins and ejecting and extruding them through an extrusion T-die onto a metal sheet to coat it by lamination, wherein a thermoplastic resin to coat a metal sheet by lamination and another thermoplastic resin than the thermoplastic resin are separately heated and melted, the other thermoplastic resin is led to both edges of an extrusion T-die, the two resins are ejected and extruded onto the metal sheet in such a manner that the other thermoplastic resin melt can coexist on both sides of the heated and melted thermoplastic resin and that the width of the part of the thermoplastic resin is larger than the width of the metal sheet, only the part of the thermoplastic resin is thus laminated on the metal sheet to coat it to give a resin-coated metal sheet, and thereafter the resin parts protruding from both sides of the metal sheet are cut off.

[8] The process for producing a resin-coated metal sheet as claimed in claim 7, wherein the thermoplastic resin and the other thermoplastic resin are ejected out through the extrusion T-die onto the metal sheet in such a manner that the other thermoplastic resin coexisting on both sides of the thermoplastic resin may form only a part inevitably thicker than the part of the thermoplastic resin.

[9] The process for producing a resin-coated metal sheet as claimed in claim 7 or 8, wherein the difference in the melt viscosity between the thermoplastic resin and the other

thermoplastic resin is at most 3000 poises at a shear rate of from 20 to 500 sec^{-1} .

[10] The process for producing a resin-coated metal sheet as claimed in any of claims 7 to 9, wherein the other thermoplastic resin is a colored thermoplastic resin.

[11] An apparatus for producing an unstretched film comprising an extruder (A1) for heating and melting a thermoplastic resin to form an unstretched film, an extruder (B1) for heating and melting another thermoplastic resin than the thermoplastic resin, a duct (A2) for resin melt supply connected to the extruder (A1), a duct (B2) for resin melt supply connected to the extruder (B1), a feed block where two holes are formed on both sides of the lower part of the duct (A2) for resin melt supply and are connected to the duct (B2) for resin melt supply, a manifold, a die lip connected to the manifold, and a T-die connected to the feed block.

[12] The apparatus for producing an unstretched film as claimed in claim 11, wherein, in the feed block, the cross section of the lower part of the duct to which the thermoplastic resin is fed is rectangular, and the cross section of the holes to be formed on both sides of the lower part of the duct is rectangular.